

REMARKS/ARGUMENTS

Responsive to the Office Action dated July 12, 2007, Applicants have filed this Preliminary Amendment. Claims 1, 2, 4-12, 14-22, 27, and 28 are pending for prosecution. Claims 1, 14, and 28 are independent.

I. PRINCIPLES OF COMPACT PROSECUTION

According to § 2106 of the MPEP, principles of compact prosecution dictate that the Examiner should state all reasons and bases for rejecting claims in the first Office Action. Applicants fully appreciate that it may not be possible for the Examiner to state all reasons and bases for rejecting claims in the first Office Action when one or more claims are amended during prosecution. Applicants respectfully submit that the claims of the instant application have not been amended during prosecution in a manner that would provide any basis for rejecting claims 14-16 under 35 U.S.C. § 112 second paragraph that was not present prior to preparation of the last several Office Actions. Accordingly, Applicants respectfully object to the untimely nature of the rejection of the aforementioned claims under 35 U.S.C. § 112 second paragraph as being inconsistent with principles of compact prosecution.

II. THE § 112 SECOND PARAGRAPH REJECTION

Claims 14-16 stand rejected under 35 U.S.C. § 112 second paragraph “as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” Claim 14 is independent. Claims 15 and 16 depend from independent claim 14. In view of the following remarks, Applicants respectfully request reconsideration and withdrawal of this rejection.

According to page 2 of the Office Action, “[a]s to claim 14, what is it meant by ‘a network structure which allows cycles’ (i.e., applicant did not specifically define the claimed

network structure and the claimed cycles, hence these subject matters render the claim to be indefinite)." Applicants respectfully disagree. The specification of the instant application fully supports and makes definite all recited claim terms and steps.

The phrase "network structure which allows cycles" is supported by the specification, including numbered paragraph 0042. In fact, in the Office Action dated May 17, 2005, the Examiner cited this very portion of the specification in acknowledging distinctions between Applicants' claimed invention and a Bayesian network. One such distinction recognized by the Examiner was "... a network structure which allows cycles" which is clearly distinct from the acyclic structure of a Bayesian network.

Additionally, what is meant by a "network structure which allows cycles" is readily understood by one of skill in the art. Thus, one of skill in the art would readily understand what is meant by the preamble of claim 14.

In conclusion, a "network structure which allows cycles" is understood by one of skill in the art and is fully supported by the specification. Thus, for at least the aforementioned reasons Applicants respectfully request reconsideration and withdrawal of the instant rejection to claim 14. Additionally, it is requested that the rejection to claims 15 and 16 be withdrawn as these claims depend from claim 14 and are also fully described and supported by the specification for at least the above stated reasons. For at least the aforementioned reasons Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112 second paragraph of claims 14-16.

III. CLAIM REJECTIONS UNDER 35 U.S.C. § 103

When determining the question of obviousness, underlying factual questions are presented which include (1) the scope and content of the prior art; (2) the level of ordinary skill

in the art at the time of the invention; (3) objective evidence of nonobviousness; and (4) the differences between the prior art and the claimed subject matter. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). Moreover, with regard to the last prong of the *Graham* inquiry, “[t]o determine whether there was an apparent reason to combine the known elements in the way a patent claims, it will often be necessary to look to interrelated teachings of multiple patents; to the effects of demands known to the design community or present in the marketplace; and to the background knowledge possessed by a person having ordinary skill in the art. To facilitate review, this analysis should be made explicit.” KSR International v. Teleflex Inc., 127 U.S. 1727 (2007).

The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art. Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962, 1 USPQ2d 1196, 1201 (Fed. Cir. 1986). The level of ordinary skill in the art of providing search results can be determined by looking to the references of record. In re GPAC, Inc., 57 F.3d 1573, 35 USPQ2d 1116 (Fed. Cir. 1995). The references of record in this case reveal that a moderate level of sophistication is present in the area of providing search results. Thus, Applicant submits that, as substantiated by the cited references, those with some experience in providing search results, including a well funded search technology companies, or the like would most likely be a person with ordinary skill in the this field of endeavor.

With respect to objective evidence of nonobviousness, Applicant submits that the record supports the conclusion that there are long-felt but unsolved needs met by the present invention. For at least this reason, Applicant respectfully submits that the claimed invention is NOT obvious in view of the cited references.

Finally, prima facie obviousness requires that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references. This motivation-suggestion-teaching test informs the Graham analysis. “To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references,” there must be “some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct.” In re Kahn, (Fed. Cir. 2006). The recent *KSR International* decision by the Supreme Court has not eliminated the motivation-suggestion-teaching test to determine whether prior art references have been properly combined. Rather, in addition to the motivation-suggestion-teaching test, the Court discussed that combinations of known technology that are “expected” may not be patentable. Stated in the affirmative, therefore, combinations are nonobvious and patentable if unexpected. In the present application, no single prior art reference nor any combination thereof (legitimate or otherwise) meets the claimed limitations of Applicant’s invention.

The § 103 Rejection over Horvitz et al in view of Wical

Claims 1-2, 4-12, 14-22, 27, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horvitz et. al (U.S. Patent No. 6,182,133) in view of Wical (U.S. Patent No. 5,904,821). In view of the following remarks, Applicants respectfully request reconsideration and withdrawal of this rejection.

The Horvitz Reference

The Horvitz reference discloses a system that “harnesses available computer resources during periods of low processing activity and low network activity, such as idle time, for prefetching, e.g., **web pages**, or pre-selected portions thereof, into local cache of a client computer.” [See Horvitz abstract, emphasis added]. According to the Horvitz system, a user enters a website address URL (Uniform Resource Locator) into a web browser which loads the web page associated with the first URL.

It will be appreciated by one of skill in the art that Horvitz interchangeably uses URL, hotlink, link, hyperlink, and hypertext link. It will further be appreciated by one of skill in the art, that at URL / hyperlink is a representation of an address or location and DOES NOT represent a link between two or more items.

The user then clicks on a hyperlink/hotlink of another web page or website contained somewhere on the first web page. In an effort to minimize web page load times the Horvitz system predictably prefetches web pages that the user **may** want to visit next in the background by tracking the URL addresses entered or selected by the user (via hotlinks). The tracked URL's and hotlinks are given a “transition probability” which Horvitz describes in column 24, line 50 – column 25, line 10 as:

This model specifies for a given web page, in terms of its URL, a set of successive web pages (one or more and in terms of their URLs) to which the user is likely to next transition, i.e., visit next, and for each such page a numeric probability (hereinafter a “transition” probability) that the user will select that **particular page**. For a given user, this model is probabilistic in nature, such as, e.g., a Bayesian network or a special class of general probabilistic models, such as a Hidden Markov model, which encodes past preferences of that user in terms of conditional probabilities of transitioning to a given URL given the page (s)he is presently viewing. This set and the transition probability associated with each **URL** therein are collectively supplied, as symbolized by line 615, to page transition predictor 630. **The predictor, given these probabilities, ranks the URLs in the set**

and then supplies these URLs, rank ordered in descending order of their transition probabilities, to URL retrieval component and data receiver 650. [Emphasis added]

It should be clearly understood that Horvitz specifies that his “techniques” and “teachings” uses a “user” model. Thus, Horvitz describes a system that requires a user model and states that such a user model is probabilistic.

The Wical Reference

The Wical reference discloses a knowledge base search and retrieval system, which includes factual knowledge base queries and concept knowledge base queries. Wical discloses the concept of a distance weight which, in one embodiment, associations have distance weights ranging from 1-10. See col. 12, lines 44-55.

Remarks

For at least the above stated reason, and for the reasons set forth in prior responses, applicant’s method/system does not use probabilities or conditional probabilities. The claimed invention does not form user models nor does the claimed invention include any step involving predictions or making predictions. To the contrary, claim 1 includes steps involving identifying a first informational item, identifying a second informational item, applying an ensemble of algorithms to determine an integer-weight relationship link between said first and second informational items, detecting access to informational items and establishing relatedness strengths by using integer-value weight through comparing document similarity in the manner described and claimed.

The Horvitz reference does not disclose, teach or suggest the steps of “identifying a first informational item, identifying a second informational item, applying an ensemble of algorithms to determine an integer-weight relationship link between said first and second informational items” as recited by claim 1. It will be appreciated that the aforementioned steps involve steps that are performed on the data independent of any user actions. Horvitz does not disclose, teach, or suggest a system or method in which clustering operations via multiple algorithms are performed on data.

Another exemplary difference is one of granularity in that the URL / address is the only unit that is examined in the Horvitz system whereas a benefit of the “informational items” recited in claims 1, 14, and 28 is that it is possible to address units of variable granularity. The Horvitz reference arguably discloses informational items, however, Horvitz does not disclose, suggest or teach the steps of “**detecting an access** of a first informational item” and “**detecting an access** of a second informational item.” Applicants disagree that the step of detecting an access of said first informational item is disclosed, taught, or suggested by “the Web Server Application Programs” or that the step of detecting an access of said second informational item is disclosed, taught, or suggested by “the Browser Application Program” as stated on page 6 of the Office Action.

Claim 14 provides “[a]n apparatus for providing classification of informational items in an information retrieval system having a network structure which allows cycles.” By this point in the prosecution of the instant application, it has been established that the Horvitz reference teaches use of probabilistic user modeling and that probabilistic user modeling is acyclic. Claim 14 is clearly directed to a network structure which allows cycles and does not involve a probabilistic network. As to the rest of claim 14, the Horvitz reference fails to disclose, teach or

suggest the element of “means for establishing the existence of relationship links between said informational items to enhance the effectiveness of said information retrieval system.” It will further be appreciated that by extension, the Horvitz reference fails to disclose, teach or suggest the step of “establishing that a relationship link exists between said first informational item and said second informational item” as recited in claim 28.

The “rank ordering” using server log data of the Horvitz reference for providing a list of URLs of the most frequently visited web pages on a server does not teach, suggest or disclose the step of “determining an integer-value weight based on the historical frequency of said relationship link” as recited by claim 1. Furthermore, even if the Wical reference does disclose an information retrieval system with weights expressed in integers, as stated on pages 7 and 8 of the Office Action, the basis for the obviousness assertion based on the combination fails because the Horvitz reference fails to provide, disclose, teach, or suggest all of the missing claim steps/elements.

Horvitz describes tracking URLs in logs as follows:

For a given user, the user **model** can be, e.g., a **simple rank ordering of URLs based on log data of page transitions** across all individuals who visit a given web site containing those pages or a Bayesian **model** of the preferences of that user encoded in terms of, e.g., numeric conditional probabilities, of selecting, e.g., given a displayed page, other pages. This **model** can reside in a web server, a client or across both.

The Horvitz reference does not disclose, teach or suggest performing any operation on relationship links, much less determining an integer value weight. It will be appreciated by one of skill in the art that adding a URL to a history log (on the browser) or adding a URL to a server access log does not describe, suggest or teach the step of “determining an integer-value weight based on the historical frequency of said relationship link” as recited in claim 1.

Accordingly the Horvitz reference fails to disclose, teach or suggest the element of “means for weighting said relationship links, said weight being directly proportional to the outcome of said ensemble of algorithms” as recited in claim 14. It will further be appreciated that by extension, the Horvitz reference fails to disclose, teach or suggest the step of “determining an integer-value weight based on the historical frequency of said relationship link” as recited in claim 28.

Finally, the Horvitz reference does not disclose, suggest, or teach the step of “applying an ensemble of algorithms to said first and second informational items in direct proportion to said integer-value weight of said relationship link” as recited by claim 1 because the Horvitz reference does not disclose, suggest, or teach a “relationship link” for the reasons already discussed. Additionally, it will be appreciated that without a relationship link, it is not possible to “determining an integer-value weight” for same. Accordingly the Horvitz reference fails to disclose, teach or suggest the step of “applying an ensemble of clustering algorithms directly proportional to said integer-value weight of said relationship link” as recited in claim 28.

Page 8 of the Office Action states, “[a]s to claims 14-22, these claims recited the same features as claims 1-12 and 27 in form of computer apparatus or a readable storage medium product, hence are rejected for the same reason.” This is not correct. There are numerous differences between independent claim 14 and claim 1. For one thing, unlike claim 1, claim 14 does not recite a step / means involving determination of a relationship link weight based on historical frequency. Thus, page 8 of the Office Action does not provide a basis, much less a sufficient basis for rejecting claims 14-22 under 35 U.S.C. § 103. For this reason, Applicants respectfully request withdrawal of the standing rejection to claims 14-22.

For at least the aforementioned reasons Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103 of claims 1, 14, and 28. Claims 2, 4-12 depend from claim 1 and are allowable for at least the same reasons. Claims 15, 17, 19-22, and 27 depend from claim 14 and are allowable for at least the same reasons. Therefore, Applicants respectfully request withdrawal of the standing rejections.

PIECEMEAL EXAMINATION

Under MPEP § 707.07(g), piecemeal examinations should be avoided. Applicants respectfully submit that the Examiner is impermissibly conducting a piecemeal examination by keyword hits and has repeatedly failed to address Applicant's arguments. It is stated on page 8 of the instant Office Action that "[t]he examiner disagrees with applicant's arguments and piecemeal interpretation that 'Horvitz is clearly a predictive system based on counting clicks whereas the Wical teaching are more information centric.'" With respect, Applicants have clearly pointed out that there has been a disconnect in the Examiner's assertions regarding what aspects of the claimed invention are disclosed in the Horvitz reference. In short, the Examiner may not make the assertion that an URL discloses a "relationship link" in one instance, and then make the inconsistent assertion that the URL also discloses an "information item". The URL of the Horvitz reference is either one or the other.

CONCLUSION

Applicants respectfully submit the claims are in condition for formal allowance which is courteously solicited. If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions

regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicants' undersigned attorney in this regard. Should any fees be necessitated by this response, the Commissioner is hereby authorized to deduct such fees from Deposit Account No. 11-0160.

Respectfully submitted,

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